

CLAIMS

1. An apparatus for aligning a collimator, comprising:
an input collimator for receiving a light signal;
a polarization mechanism, located proximate the input collimator, for receiving and polarizing the light signal;
an output collimator; and
an adjustment mechanism for adjusting a position of the output collimator in order to align the output collimator for receiving the polarized light signal from the polarization mechanism, wherein the adjustment mechanism provides for five degrees of freedom in aligning the output collimator.
2. The apparatus of claim 1 wherein the polarization mechanism includes a pair of wave plates.
3. The apparatus of claim 1 wherein the first adjustment mechanism includes a pair of set screws physically coupled to the output collimator in the vertical plane.
4. The apparatus of claim 1 wherein the second adjustment mechanism includes a pair of set screws physically coupled to the output collimator in the horizontal plane.
5. The apparatus of claim 1, further including a compressible member located beneath the output collimator.
6. The apparatus of claim 1, further comprising a beam splitter, located between the polarization mechanism and the output collimator, for splitting the polarized light signal into two polarized light signals.
7. The apparatus of claim 6, further comprising:
a photodiode positioned to receive one of the polarized light signals; and
a circuit, coupled to the photodiode, for electrical processing of the one polarized light signal.
8. The apparatus of claim 1 wherein the adjustment mechanism includes:

a first adjustment mechanism for providing translation and tilting movement of the output collimator in a vertical plane of the apparatus;

a second adjustment mechanism for providing translation and tilting movement of the output collimator in a horizontal plane of the apparatus; and

a rotational adjustment mechanism for use in rotating the output collimator.

9. The apparatus of claim 1 wherein the apparatus is contained within a package having overall dimensions equal to or less than 72mm x 35mm x 31mm.

10. A method for aligning a collimator, comprising:

receiving a light signal via an input collimator; ~

polarizing the light signal;

receiving the polarized light signal via an output collimator; and

adjusting a position of the output collimator in order to align the output collimator for receiving the polarized light signal, wherein the adjusting step provides for five degrees of freedom in aligning the output collimator.

11. The method of claim 10 wherein the polarizing step includes passing the light signal through a pair of wave plates.

12. The method of claim 10 wherein the providing the first translation step includes providing a pair of set screws physically coupled to the output collimator in a vertical plane of the output collimator.

13. The method of claim 10 wherein the providing the second translation step includes providing a pair of set screws physically coupled to the output collimator in a horizontal plane of the output collimator.

14. The method of claim 10, further providing a compressible member located beneath the output collimator.

15. The method of claim 10, further comprising splitting the polarized light signal into two polarized light signals.

16. The method of claim 15, further comprising:
receiving one of the polarized light signals; and
transmitting the one polarized light signal to a circuit for analysis.
17. The method of claim 10 wherein the adjusting step includes:
providing a first translation and tilting movement of the output collimator in a vertical plane;
providing a second translation and tilting movement of the output collimator in a horizontal plane; and
rotating the output collimator.
18. An apparatus for aligning a collimator, comprising:
an input collimator for receiving a light signal;
a polarization mechanism, located proximate the input collimator, for receiving and polarizing the light signal;
an output collimator;
a beam splitter, located between the polarization mechanism and the output collimator, for splitting the polarized light signal into two polarized light signals; and
an adjustment mechanism for adjusting a position of the output collimator in order to align the output collimator for receiving one of the polarized light signals from the beam splitter, the adjustment mechanism including:
a first adjustment mechanism for providing translation and tilting movement of the output collimator in a vertical plane of the apparatus;
a second adjustment mechanism for providing translation and tilting movement of the output collimator in a horizontal plane of the apparatus; and
a rotational adjustment mechanism for use in rotating the output collimator,
wherein the first adjustment mechanism, the second adjustment mechanism, and the rotational adjustment mechanism together provide for five degrees of freedom in aligning the output collimator.
19. The apparatus of claim 18 wherein:
the first adjustment mechanism includes a pair of set screws physically coupled to the output collimator in the vertical plane;

the second adjustment mechanism includes a pair of set screws physically coupled to the output collimator in the horizontal plane; and

the rotational adjustment mechanism includes an aperture in a rotational clamp positioned around the output collimator and configured to accommodate a pin for rotating the output collimator.

20. The apparatus of claim 18 wherein the apparatus is contained within a package having overall dimensions equal to or less than 72mm x 35mm x 31mm.